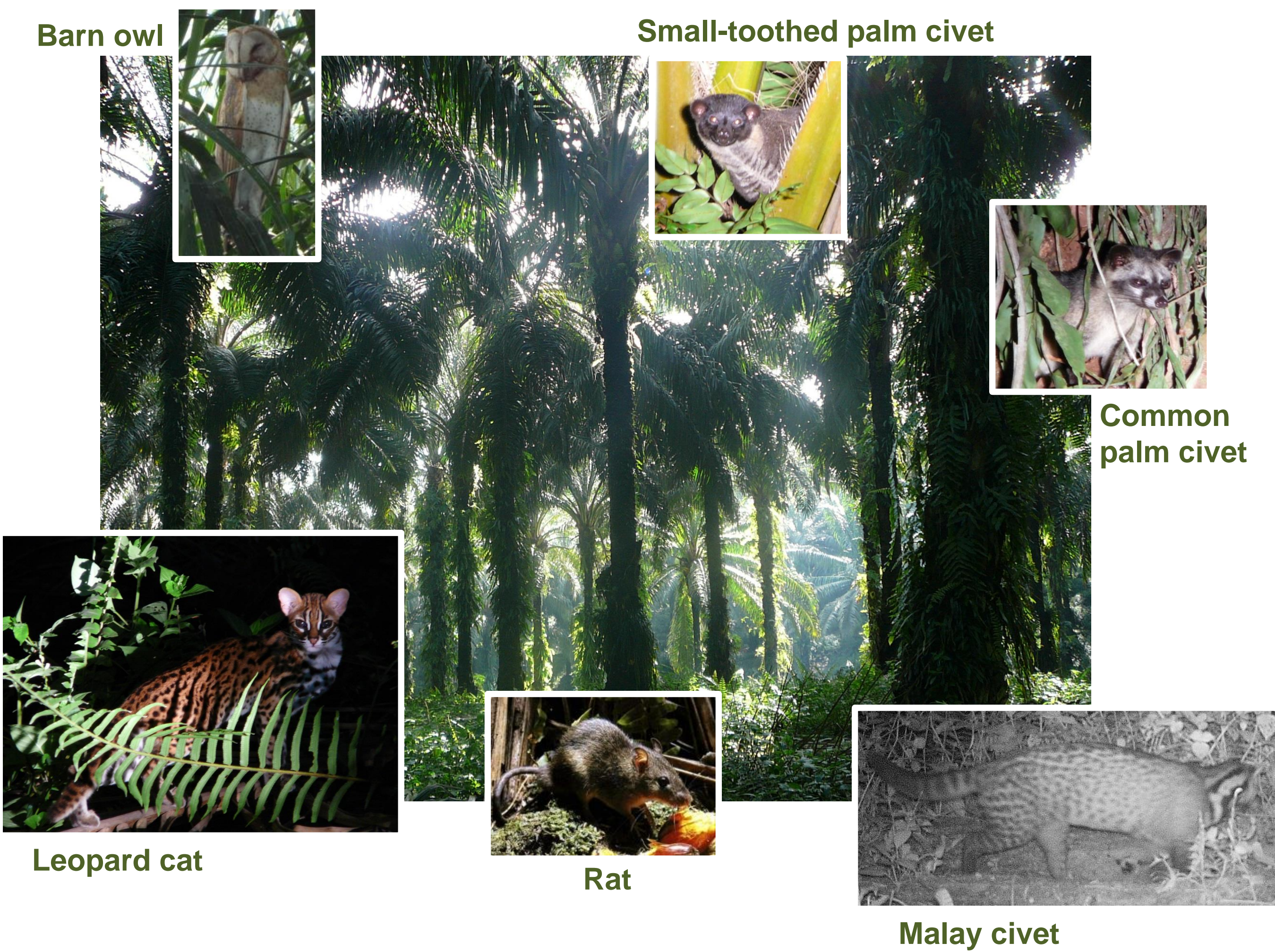


# Small carnivores contribute to rat control in oil palm plantations

In Southeast Asia, rats can cause severe damage in oil palm plantations. Barn owls are commonly used by agro-industries to reinforce rat control. However, in some plantations, rat damage (hence population size) remains substantial. What might explain such population differences? Could small carnivores play a role as predators?

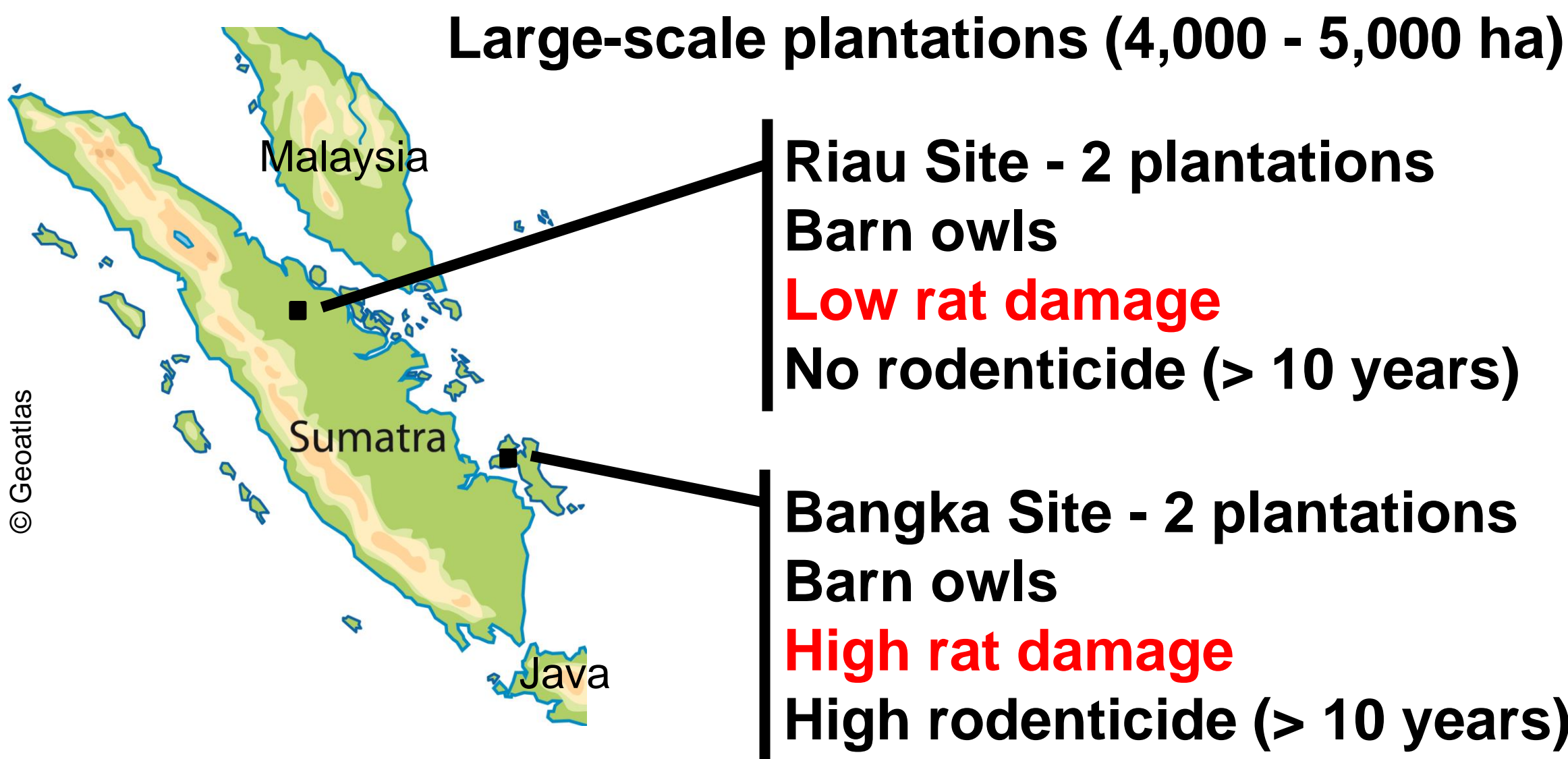


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## 1- Two sites compared in Indonesia



### Sampling

Dry seasons 2010 - 2011 - 2012

Diversity and abundance of small carnivores:

- 478 km covered for faeces counts
- 3,000 km for spotlight counts

Small carnivore community diet:

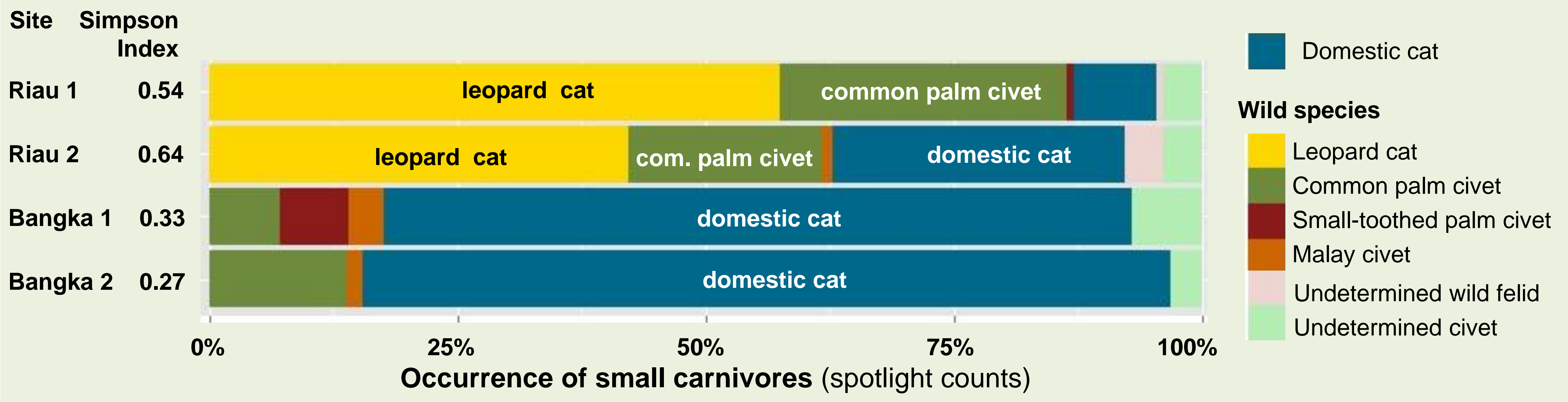
- 159 faeces analyzed
- 311 food items identified



## 2- Results: small carnivores, notably leopard cats, may well enhance rat control

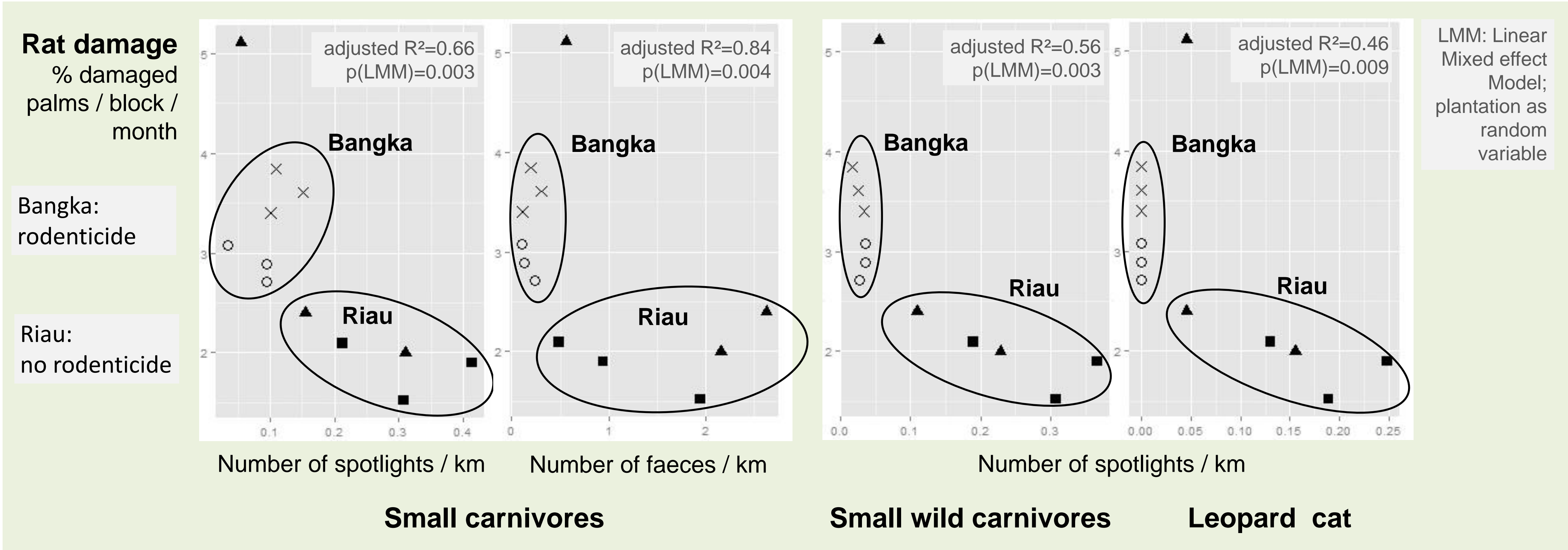
### Small carnivore diversity

- Leopard cat over-dominant in Riau, whereas absent in Bangka
- Small carnivore community more diverse in Riau (*Simpson Index*)



### Small carnivore abundance versus rat damage

- 2 to 10 times more small carnivores in Riau
- The larger the number of small carnivores, notably leopard cats, the lower the rat damage



### Small carnivore diet (data not shown)

Less plant material in the diet of the small carnivores in Riau (frequency of occurrence in faeces: 51.1% in Riau and 30.9% in Bangka; p=0,035) ...which is consistent with small carnivore community composition



## 3- Questions arising

- Is predation by small carnivores a necessary condition to limit rat populations?
- Does rodenticide have the opposite effect to the one intended?
  - indirect intoxication of barn owls and small carnivores?
  - real effect of rodenticide on rat population (rat resistance)?